CLAIMS

1. Method for enhancing erosion uniformity on the sputtering surface of a magnetron cathodic sputtering target, characterized in that at least one ferromagnetic piece is added to said target intended to be coupled to a magnetron maintained fixed as compared to said target, by complete or partial insertion into said target or by juxtaposition thereto, so as to bring about, at the entire sputtering surface, a curvature reduction of the magnetic induction lines generated by the magnetron.

2. Method for enhancing erosion uniformity on the sputtering surface of a magnetron cathodic sputtering target and for indicating the end of use of this target, characterized in that at least one ferromagnetic piece is added to said target intended to be coupled to a magnetron maintained fixed as compared to said target, by complete or partial insertion into said target or by juxtaposition thereto, so as to bring about, at the entire sputtering surface, a curvature reduction of the magnetic induction lines generated by the magnetron.

3. Method according to claim 1 or 2, wherein the ferromagnetic piece(s) are completely or partially inserted into the target.

4. Method according to claim 1 or 2, wherein when the target is made of a low melting point material, the

ferromagnetic piece(s) are inserted from the ends of this target or from its lower face or juxtaposed to the ends of this target or to its lower face.

5. Method according to any of claims 1 to 4, wherein at least one ferromagnetic piece is added which characteristics of location, shape and size are predetermined from the magnetron physical characteristics.

6. Method according to any of claims 1 to 5, wherein at least one ferromagnetic piece is added which characteristics of location, shape and size are predetermined from the physical characteristics of the magnetron, by:

a) comparing on the one hand the measured values and the modelled values of the total magnetic induction generated by the magnetron on the target sputtering surface and on the other hand of the vertical component of said magnetic induction,

b) searching in this modelled induction the characteristics of location, shape and size of at least one ferromagnetic piece able to bring about, at the said sputtering surface, the desired curvature reduction of the magnetic induction lines,

c) optimizing, by means of the $\frac{Bz}{B_{total}}$ parameter, the characteristics of the searched location, shape and size.

7. Method according to claim 6, wherein at least one ferromagnetic piece is added which characteristics of location, shape and size are predetermined, from the physical characteristics of the magnetron, by:

a) measuring the values of the total magnetic induction generated by the magnetron and of the vertical component of this magnetic induction,

b) modelling, by means of a software-assisted computer technique, the total magnetic induction and of the vertical component of this magnetic induction,

c) comparing the modelled values of the total magnetic induction on the one hand and of its vertical component on the other hand, with the corresponding measured values,

d) searching in this modelled induction the characteristics of location, shape and size of at least one ferromagnetic piece which is able to bring about, at the target sputtering surface, the desired curvature reduction of the magnetic induction lines,

e) optimizing, by means of the $\frac{Bz}{B_{total}}$ parameter, the searched position, shape and size.

8. Method according to any of claims 1 to 7, wherein curvature reduction of the magnetic induction lines leads to a parallelism increase of these induction lines at the level of the entire sputtering surface.